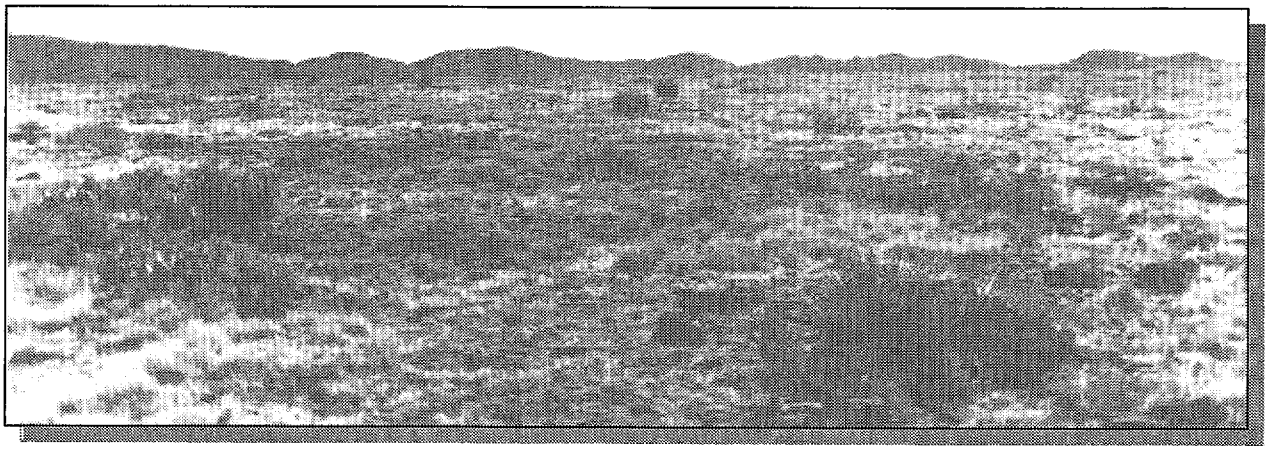

View of land surrounding Bagdad Airport

8.1 INTRODUCTION

Analyses conducted in previous chapters evaluated airport development needs based on forecast activity changes, environmental factors, and operational efficiency. One of the most important elements of the master planning process is the application of basic economic, financial and management rationale to assure feasibility of project implementation. In short, this chapter will concentrate on those factors that will help make the Bagdad Airport Master Plan achievable and successful.

The program outlined on the following pages has been evaluated from a variety of perspectives. The plan is not exclusively dependent upon Yavapai County for financing the recommended facility improvements. Several sources for development funding exist which will provide decision-makers the means necessary for implementing the program. In fact, the development program is dependent upon other sources of capital to finance the majority of the proposed development. This financial commitment on the part of the county will result in substantial economic benefit to the Bagdad area and could be repaid many times over through a system of airport leases, fees and charges, and through increased business activity and taxes throughout the region.

8.2 AIRPORT EXPENSES

As with any public facility, development costs are not the only costs to be considered at an airport. Day-to-day operating expenses also become the responsibility of the airport sponsor. It is important that these expenses be reviewed to determine how the airport is to be financed. **Table 8-1** shows the existing and projected operating expenses for Bagdad Airport with a description of each expense category that follows.

Table 8-1 Current and Projected Operating Expenses

Expense Category	Current Annual	2002	2007	2017
Administration	1,845	1,937	2,034	2,136
Maintenance	4,913	5,159	5,417	5,687
Utility and Misc.	2,000	2,100	2,205	2,315
Total Expense	**8,758**	**9,196**	**9,656**	**10,138**

Note: projections are based on 1% annual growth in expenses

8.2.1 Administrative

Administrative fees include items such as employee salaries, benefits and liability insurance. Bagdad Airport does not have a salaried airport manager. Yavapai County has a long-standing agreement with Mr. Robert Manifee who is an airport tenant. From discussions with the County and Mr. Manifee, the agreement is that Mr. Manifee will conduct day-to-day maintenance and keep the County notified of any needed repair for the lease of the main hangar. However, there is no current written agreement for other services and no indication when the present agreement expires. As shown in Table 8-1, current administrative costs are estimated at $1,845 per year.

8.2.2 Maintenance

Maintenance costs include the general costs of maintaining all airfield facilities such as light replacements, landscaping, janitorial services, equipment maintenance, and building and pavement repair. Yavapai County has spent approximately $ 29,476 in the last six years for repairs to the airport (roadway, cleanup, mowing) or $ 4,913 annually.

8.2.3 Utilities, Supplies, and Misc.

The primary utility expense incurred by the airport is electricity. Airfield lighting accounts for most of the electricity expenditures. Yavapai County estimates that current airport utilities and other miscellaneous expenses for the airport average $2,000 per year.

8.3 AIRPORT INCOME

Typically, airport revenues generated are used to offset some or all of an airport's operating costs. However, Yavapai County does not collect user fees and, thus, airport income for Bagdad is nonexistent. Since fuel is not available at Bagdad Airport, there is no fuel flowage fee to collect. Yavapai County does not charge the airport manager, since his caretaker services are provided in exchange for his lease lot.

8.4 AIRPORT DEVELOPMENT SCHEDULE AND COST SUMMARIES

The initial step in establishing an airport development schedule is to determine the cost of each proposed improvement. Cost data used in this study was collected from a variety of sources, including published engineering indices, government agencies and similar airport construction projects. The estimates for each planning period are based on 1998 dollars. A 25 percent contingency for overhead, engineering, administration and unforeseen circumstances has been applied to the cost estimates of various development projects. In future years, as the master plan is implemented, the current cost estimates can continue to serve as management aids by adjusting the 1998-based figures for subsequent inflation.

An airport development schedule takes into consideration not only the demand for facilities but also the financial capability of the airport sponsor and the need to resolve current deficiencies. Development project scheduling has been divided into three major phases, covering the entire planning period. The three planning phases are intended to reflect the relative importance of the development projects with respect to aviation safety and airport efficiency.

The first five-year phase includes those items of critical importance to the overall safe operation of the airport and its benefit to the community as a whole.

The second five-year Phase includes those items necessary to tie related development items together and maintains or improves the capacity of the facility. The third long-term phase covering the remaining ten years should include those items necessary to improve efficiency and the overall operational effectiveness of the airport. Each phase should also include basic maintenance and revenue generating components. As shown in **Table 8-2**, the total cost for completing all three phases of development at Bagdad Airport will be just over $1 million by the year 2017.

Table 8-2 Estimated Development Schedule and Cost Summary

Phase I (current - 2002)		**Estimated Cost**
1 (00)	Wind data recorder	NA
2 (00)	Overlay Runway 5-23, taxiway connectors and aprons w/ 2 " asphalt	$209,138
3 (00)	Install REILs @ 23 end	$20,000
4 (00)	Upgrade LIRL to MIRL system (includes electrical improvements)	$50,000
5 (01)	Paint edge markings @ aprons and taxiway connectors	$1,940
6 (01)	Install reflectors @ taxiway connectors	$200
7 (01)	Install 8 foot game fence (4 strand barbed wire)	$46,400
8 (01)	Warning Signs	$1,400
9 (02)	Install additional signs in town	$100
	TOTAL Phase I	**$329,178**

Table 8-2 Estimated Development Schedule and Cost Summary (Cont'd)

Phase II (2003-2007)		Estimated Cost
1	Terminal Bldg Design	$5,000
2	Construct Terminal Bldg	$15,000
3	Construct, drain, pave apron expansion	$25,500
4	Install portable sewage system @ Terminal area (septic tank)	$2,500
5	Install additional water hookups	$7,500
6	Install telephone line @ Terminal Bldg	$8,000
7	Limited Master Plan Update	$20,000
8	Reconstruct Runway 5-23 (600ft. @ 5 end)	$240,000
9	Repave and overlay runway and taxiway connectors*	$168,498
	TOTAL Phase II	**$491,998**
Phase III (2007-2017)		**Estimated Cost**
1	GPS Feasibility Study	5,000
2	Pave auto parking	$39,820
3	Overlay aprons	$40,634
4	Demolish and construct new east hangar	$132,000
	TOTAL Phase III	**$217,454**
	Total Development Costs (Phases I-III)	**$1,038,629**

* Although not originally supported by the PAC and Airport sponsor earlier in the master planning process, ADOT Aeronautics has recommended that Runway 05-23 weight bearing capacity be upgraded from 4,000 to 12,500 lbs. SWL. This development may be most appropriate during the latter part of Phase II during the repaving project.

Prior to scheduling individual projects, two key points should be emphasized. First, with few exceptions, the staging of development projects has been based upon the projected activity at the airport. However, actual activity or need may vary from forecast levels. With the exception of those items directly related to safety and resolving current deficiencies the development staging in this section should also be viewed as a projection.

In the event airport activity does not follow projected levels, implementation of projects should be altered to coincide with demand rather than according to an estimated schedule. Second, due to the conceptual nature of a master plan, implementation of recommended capital projects should occur only after further refinement of their design considerations and cost estimates through detailed engineering analyses at the project level are completed.

8.4.1 Phase I covers the initial development through 2002. At the end of Phase I, Bagdad Airport is expected to have approximately 14 based aircraft and an annual traffic volume of 2,800 aircraft operations. The airport is currently in near-original condition which fails to serve all the community's need. Therefore, a substantial investment will be needed in the first five years to improve the airport to a satisfactory level.

Phase I will focus on providing those facilities that are necessary for safety and required for a minimum level of aviation service. Phase I development will concentrate on the proposed maintenance and lighting of Runway 05-23.

Airside and landside facility improvements will include: runway overlay, installation of MIRL system for runway to enhance nighttime operations, installation of taxiway reflectors recommended to prevent taxiing off pavements, taxiway and apron markings, and upgrading fencing (to eight feet) with signs. This development will form the foundation for future development and alleviate the most severe airport deficiencies.

8.4.2 Phase II development includes the five-year period from 2003 through 2007. During Phase II, the number of aircraft based at Bagdad Airport is expected to grow to 15 aircraft and the annual traffic volume will increase to 3,000 operations.

Development in this phase will focus primarily on improving the operating capabilities of the airport. These projects include establishment of a pavement maintenance schedule for the runway, taxiway connectors and apron, reconstruction of a portion of the runway. This phase will complete the majority of the airside development planned for Bagdad Airport. The terminal area development projects in Phase II include construction of the terminal building, construction of the additional aircraft apron to the west, and additional utilities such as proper electrical systems, water, sewage and telephone. The Airport Master Plan should also be updated.

8.4.3 Phase III (2008-2017) projects will focus on expanding and improving terminal area facilities. By the end of Phase III, activity at Bagdad Airport is expected to include 15 based aircraft and 3,000 annual operations, similar to Phase II.

At the completion of Phase III, Bagdad Airport will be completely capable of accommodating the aviation activity anticipated during the planning period for the widest range of operating conditions.

The major development items in Phase III include paving auto parking, overlaying apron, and constructing a new East hangar following demolition of the existing one. Further a GPS feasibility study is recommended to evaluate the cost/benefit of implementation. There is a considerable amount of flexibility built in to the development staging, thereby providing that, if the local share of the development costs on a given project becomes prohibitive during either of the first two Phases, shifting the financial burden to the subsequent Phase could be considered. **Table 8-3** shows the proposed airport development schedule and project cost summary for all of the recommended development at Bagdad Airport.

Table 8-3 Summary of Total Development Costs

Phase I - Short Term	329,178
Phase II – Intermediate	491,998
Phase III – Long Term	217,454
TOTAL (20-Year Planning Period)	**$1,038,629**

8.5 AIRPORT DEVELOPMENT FUNDING OPTIONS

Financing of the proposed airport development does not rely exclusively upon the financial resources of Yavapai County. Funding assistance is available through various grant-in aid programs on both the state and federal levels.

8.5.1 Federal Aid to Airports

The primary source of funds for airport development is the tax paid by the aviation consumer throughout the country.

The process of collecting and distributing aviation user taxes is quite complex but generally follows one basic premise. Aviation goods and services are provided for a fee and are taxed at various rates. These aviation excise taxes are deposited in the Aviation Trust Fund. Distribution of the taxes deposited in the Aviation Trust Fund is controlled by the Congress and administered by the FAA. The Congress establishes the funding authorization levels and the FAA establishes priorities for distributing the funds appropriated through the budget process.

The Airport Improvement Program (AIP) was established in 1982, to provide in part, for the development of a system of airports throughout the nation. Monies appropriated from the Aviation Trust Fund can provide up to approximately 90 percent of the financing necessary for eligible airport development projects. These monies are distributed to eligible airport sponsors through grants administered by the FAA.

Federal airport development programs similar to AIP date back to 1946 with the passage of the Federal Airport Act. The Airport Improvement Program is currently scheduled to continue through 2000. One basic underlying assumption in this chapter is that AIP or other similar program will continue to support airport development requirements throughout the planning period.

The primary feature of AIP funding which must be recognized and properly considered is that these funds are distributed on a priority basis. These priorities are established by each FAA Regional Office based upon the number and dollar amount of applications received, and the amounts made available each year. Therefore, Bagdad Airport will be competing with other airport sponsors in the Western-Pacific Region for a limited number of development grants. Since the Airport Improvement Program uses a 91.06% Federal to 8.94% State and Local matching formula for airports like Bagdad Airport, federal grants can provide substantial assistance to airport development programs such as is proposed in this Master Plan.

Table 8-4 shows the potential development funding shares with Federal Funding participation. However, it is important to note the Bagdad Airport has not received Federal funding in over 20 years. Airport development grants, whether Federal or State, obtained by the County must always be matched by the sponsor. Therefore, it is important to act expeditiously in securing the appropriate local share for these grants or to have the local share already budgeted for the year in which the grant is desired or expected.

Table 8-4 Development Funding Sources with Federal Participation

Phase	Federal (@ 91.06%)	State (@ .447 %)	County/Other (@ .447%)	Total
Phase I	299,749	14,714	14,714	329,178
Phase II	448,014	21,992	21,992	491,998
Phase III	198,013	9,720	9,720	217,454
TOTAL	**$945,777**	**$46,426**	**$46,426**	**$1,038,629**

8.5.2 State Aid to Airports

Taxes levied by the state on aviation fuel, flight property, and aircraft registration fees as well as interest on these funds are deposited in the State Aviation Fund.

The State Transportation Board established the policies for the distribution of these funds by ADOT Aeronautics. Under the State Grant Program, an airport can receive funding for up to one-half of the local share of projects receiving federal AIP funding. The State also provides up to 95 percent funding for projects, which are not being funded by the AIP program.

Table 8-5 shows the future eligible facility development costs for Bagdad Airport with State funding participation, along with the County's share.

Table 8-5 Development Funding Sources without Federal Participation

Phase	State (@ 90%)	County/Other (@ 10%)	Total
Phase I	296,260	32,918	329,178
Phase II	442,798	49,200	491,998
Phase III	195,709	21,745	217,454
TOTAL	**$934,766**	**$103,863**	**$1,038,629**

8.5.3 State Airport Loan Program

The Arizona Department of Transportation – Aeronautics Division (ADOT) recently established the Airport Loan Program. However, the future of this program is uncertain (note: Loan Program nearing possible elimination as of Spring 2000). This program was established to enhance the utilization of State funds and provide a flexible funding mechanism to assist airport in funding improvement projects. Eligible projects include runway, taxiway, and apron improvements; land acquisition, planning studies, and the preparation of plans and specification for airport construction projects, as well as revenue generating improvements such as hangars and fuel storage facilities.

Projects which are not currently eligible for the State Airport Loan Program are considered if the project would enhance the airport's ability to be financially self-sufficient.

There are three ways in which the loan funds can be used: Grant Advance, Matching Funds, or Revenue Generating Projects. The Grant Advance Loan funds are provided when the airport can demonstrate the ability to accelerate the development and construction of a multi-phase project.

The project(s) must be compatible with the Airport Master Plan and be included in the ADOT 5-year Airport Development Program. The Matching Funds are provided to meet the local matching fund requirement for securing federal airport improvement grants or other federal and state grants. The Revenue Generating funds are provided for airport-related construction projects that are not eligible for funding under another program.

8.6 FINANCING LOCAL SHARE OF AIRPORT CAPITAL IMPROVEMENTS

In addition to any revenues derived from airport operations, the County has several other methods available for financing the local share of airport development costs. The most common methods involve debt financing which amortize the debt over the useful life of the project or a specified period. Methods of debt financing commonly available to the County are discussed below.

8.6.1 General Obligation Bonds

General Obligation Bonds are a common form of municipal bonds whose payment is secured by the full faith, credit, and taxing authority of the County. General Obligation Bonds are instruments of credit and, because of the community guarantee, reduce the available debt level of the sponsoring community.

This type of bond uses tax revenues to retire debt and the key element becomes the approval of the electorate to a tax levy to support airport development. If approved, General Obligation Bonds are typically issued at a lower interest rate than other types of bonds.

8.6.2 Self-Liquidating General Obligation Bonds

As with all General Obligation Bonds, Self-liquidating Bonds are secured by the issuing governmental agency. They are retired, however, by the adequate cash flow from the operation of the facility for which the bonds were issued. However, the state court must determine that the project is self-sustaining and that the debt may legally be excluded from the debt limits of the community.

Since the credit of the local government bears the ultimate risk of default, the bond issue is still considered, for the purpose of financial analysis, as part of the debt limit of the community. Therefore, this method of financing may mean a higher rate of interest on all bonds sold by the community. The amount of increase in the interest rate depends, in part, upon the degree of exposure risk of the bond. Exposure risk occurs when there is insufficient net airport operating income to cover the level of debt service plus coverage requirements, thus forcing the community to absorb the residual.

8.6.3 Revenue Bonds

Revenue Bonds are payable solely from the revenue of a particular project or from operating income of the borrowing agency, such as an Airport Authority which lacks taxing powers. Generally, they fall outside of constitutional and statutory limitations and, in many cases, do not require electorate approval. Because of the limitations on other public bonds, airport sponsors are increasingly turning to revenue bonds whenever possible.

However, Revenue Bonds normally carry higher rate of interest because they lack the guarantees of General Obligation Bonds. It should also be noted that the general public would usually be aware of the risk involved with a revenue bond issue for a general aviation airport. Therefore, the sale of such bonds could be more difficult than others.

8.6.4 Bank Financing

Some airport sponsors have used bank financing as a means of providing airport development capital. Generally, two conditions are required; the airport must demonstrate the ability to repay the loan plus interest, and the capital improvement must be less than the value of the present facility. These are standard conditions, which are applied to almost all bank loan transactions.

8.6.5 Third-Party Support

Several types of funding fall into this category. For example, individuals or interested organizations may contribute portions of the required development funds.

Although not a common means of airport financing, the role of private financial contributions not only increases the financial support of the project, but also stimulates moral support for airport development.

8.6.6 Community Support

While it would certainly be advantageous for an airport to support itself, the indirect and tangible benefits of the airport to the economy of the region and its growth must be considered. Other community benefits involve business growth and development that is enhanced by the availability of an airport. This type of extensive use by corporate aircraft is a definite trend across the United States. The trend has been generated in part by the movement of American Industry from the larger metropolitan areas to smaller communities that offer lower taxes and labor costs and a better working environment.

8.7 CONTINUOUS PLANNING PROCESS

The successful implementation of the Bagdad Airport Master Plan will require full participation on the part of Yavapai County. Among the more important factors influencing the county's decisions to carry out a recommendation are scheduling or sequencing, and airport activity. Both of these factors can be used as references in implementation of the plan.

In the effort to improve airport sponsor practices, several recommendations are given toward the objective of a cost-recovery based financial schedule.

- Adoption of Cost Center Structure – This consists of the direct cost centers including the Airfield, proposed Terminal area, other Aeronautical buildings, and other indirect cost centers including Administration and Public Safety.

- Establish Aeronautical Property Fees and Rentals – Consider collecting fees for use of property that closely reflect market value rates.

While it was necessary for scheduling and budgeting purposes to focus on the timing of airport development, levels of activity in fact establish the actual need for facilities. Proper master plan implementation suggests the use of airport activity rather than time as the primary criterion in airport development. However, the development must also follow a logical progression so that the development does not create intermediate conflicts in the process.

Experience has demonstrated that significant problems can arise from strict adherence to schedules rather than demands. These problems center around the inherent inflexibility and inability of this policy to deal with new issues that develop from unforeseen events that may occur after the plan is completed. The continuous planning process requires Yavapai County to consistently monitor the progress of the airport in terms of growth in based aircraft and annual operations. Accurate tracking of this data is important because this growth is critical to the exact timing and need for a significant portion of the proposed airport facilities.

8.8 SUMMARY

Funding for the development of Bagdad Airport over the next twenty plus years will be obtained from several sources. Federal and/or state aid will be critical to the funding of proposed development at Bagdad Airport.

Due to Bagdad Airport's Federal funding history, State aid will be the primary source of assistance and will be instrumental in carrying out the plan. State Aeronautics funds are limited and every effort should be made to insure the active participation in project programming with the state. The County should participate, when appropriate, in State Aeronautics planning and allocation formula development. ✈